

BIRDS OF THE UPPER NILGIRIS PLATEAU, WESTERN GHATS, INDIA<sup>1</sup>ASHFAQ AHMED ZARRI<sup>2,3</sup> ASAD R. RAHMANI<sup>2,4</sup> AND B. SENTHILMURUGAN<sup>2,5</sup><sup>1</sup>Accepted July 18, 2007<sup>2</sup>Bombay Natural History Society, Hornbill House, S.B. Singh Road, Mumbai 400 001, Maharashtra, India.<sup>3</sup>Present address: Baba Ghulam Shah Badshah University, Rajouri 185 131, Jammu & Kashmir, India. Email: ashfaq\_az@rediffmail.com<sup>4</sup>Email: bnhs@bom3@vsnl.net.in<sup>5</sup>Email: sentrogon@rediffmail.com

Although excellent bird collections have been amassed from the Nilgiris in southern India and several bird surveys have been conducted since the late 19<sup>th</sup> century, they were either focused on the lower elevations, species specific or not intensive. Bird surveys and community investigations in the higher elevations of the Nilgiris are few, with results generally unpublished, or described only in travelogues. In the course of this first systematic effort to study the bird community structure and ecology of this region, several rare and significant birds were recorded and their status evaluated. We present here an annotated checklist of 192 bird species, of which 145 were recorded by us between December 2000 and April 2004, and 47 are records of other workers from the Upper Nilgiris Plateau (1,700 m above msl). The species list also includes ten Threatened birds: five recorded during this study and five recorded by other workers in the past. The checklist also includes seven Near Threatened species, including four recorded during this study and three by other workers. A review of the literature indicates a drastic decline in the populations of wintering snipes, Eurasian Woodcock *Scolopax rusticola* and some raptors, and the disappearance of four vulture species. Threatened species and Western Ghats endemics, such as the Black-chinned Laughingthrush *Trochaloxyron cachinnans* and the White-bellied Blue Robin *Myiomela albiventris*, and the winter visitor Kashmir Flycatcher *Ficedula subrubra* were identified to be at risk on account of habitat loss and anthropogenic pressures. We discuss the conservation problems for the avifauna of the Upper Nilgiris Plateau.

**Key words:** Upper Nilgiris, Western Ghats, Endemic bird species, Threatened birds, Shola, Mukurthi National Park

## INTRODUCTION

Since the 19<sup>th</sup> century many bird collections have been carried out on the birds of the Nilgiri Hills of the Western Ghats in India. Most of these bird surveys were either focused on the lower elevations or were not intensive with their records generally remaining unpublished or being described in travelogues on exploratory visits. Bird community investigations in the higher elevations of the Nilgiris are scarce. Davison (1883) gave perhaps the earliest and the most comprehensive account of the birds of the Nilgiris, based on his personal observations and bird collections. Cardew (1885) provided accounts of some species unrecorded or considered doubtful by Davison (1883). Baker and Inglis (1930) included natural history records on several Nilgiri birds from early 20<sup>th</sup> century, while Betts (1931) recorded observations on the behaviour and status of bulbuls, and other birds of the Nilgiris. The ecological problems of the Nilgiris were discussed by Navarro (1966), and Ali (1977) highlighted the affinities of the Nilgiri and Himalayan fauna, including the laughingthrushes.

Ornithological explorations in the Upper Nilgiris during recent decades have focused on either a single species or a group. For example, Khan (1979) studied the ecology of the Black-and-Orange Flycatcher *Ficedula nigrorufa*. Islam (1985) studied the ecology and behaviour of the Black-

chinned Laughingthrush *Trochaloxyron cachinnans*. Thirumurthi and Balaji (1999) surveyed raptors in Nilgiris, while Vijayan *et al.* (2000) conducted a preliminary status survey of the Black-chinned Laughingthrush. Autecology works have been carried out on a few species including the Black-chinned Laughingthrush by Zarri (2005).

The present study was the first intensive investigation of the composition and status of the birds of the Upper Nilgiris Plateau. This paper describes a total of 192 species for the Upper Nilgiris, including the species reported by earlier authors. During the course of this study nine Western Ghats endemics and several threatened species were recorded. A review of literature suggests a decline in the populations of several birds and the disappearance of some species.

## STUDY AREA

## Upper Nilgiris Plateau

The area covered in this paper is part of the Nilgiri Hills from 1,700 m above msl to the summit of Dodabetta (2,634 m above msl) and is commonly known as the Upper Nilgiris Plateau and lies between 11° 10' to 10° 30' N and 76° 25' to 77° 00' E (Fig. 1). Kerala bounds the Nilgiri Hills on the west, Karnataka on the north and Coimbatore district on the south-east. Eight Important Bird Areas (IBAs) have

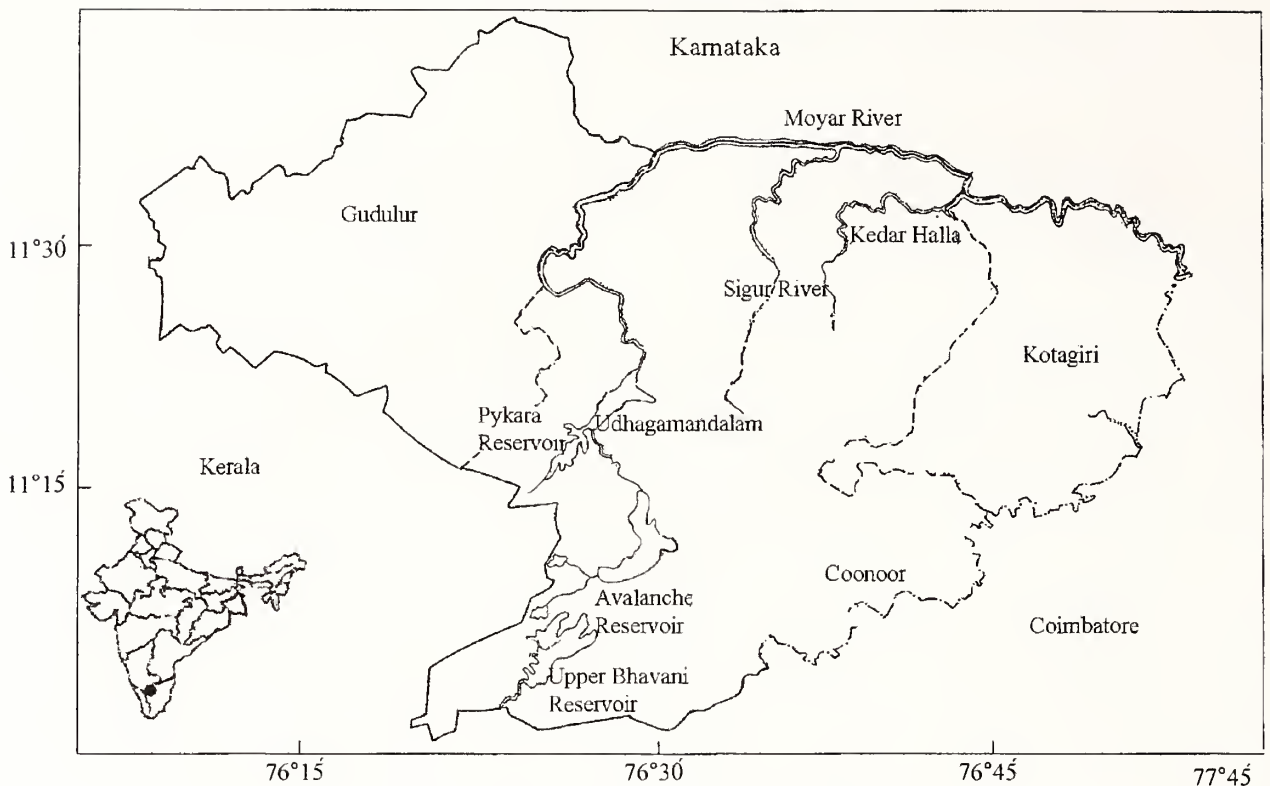


Fig. 1: Location of the Nilgiri hills, Western Ghats, India

been identified recently from the Nilgiris (Islam and Rahmani 2004).

The Nilgiris is a part of the Nilgiri Biosphere Reserve and occupies the highest and westernmost part of Tamil Nadu State. The Nilgiris is located in the Western Ghats (Zone-5) as per the biogeographic classification of India (Rodgers and Panwar 1988). The Upper Nilgiris Plateau rises sharply from the surrounding country and is divided by a range of peaks running in a general north-south direction, the highest point being Dodabetta (2,634 m above msl), which is also the second highest peak in the Western Ghats after Anaimudi (2,695 m above msl). The western end of the Plateau is sheer rock, while the interior of the Plateau consists mainly of undulating grassy hills divided by narrow valleys, each one containing a stream or swamp surrounded by shola thickets. The Upper Nilgiris Plateau forms the main watershed for two important tributaries (Bhavani and Moyar) of the Cauvery river. There are numerous streams, draining either into the Moyar, which flows eastward through a deep gully along the northern border of the district or into the Bhavani that flows on the southern border. The area receives both the Southwest and Northeast monsoons, during which the western Upper Nilgiris Plateau towards Mukurti National Park (MNP) and its surroundings receives up to 5,600 mm rainfall per year (Lengerue 1977).

#### Mukurti National Park

The Mukurti National Park (MNP) is the only protected area falling under our intensive study area and lies within 11° 10'-11° 22' N and 76° 26'-76° 34' E. It forms a key protected area for conservation of high altitude grassland flora and fauna. MNP encompasses an area of 78.46 sq. km, and the entire terrain is undulating grassland with patches of montane evergreen forest (shola) confined to the folds of hills and depressions. The average altitude is around 2,400 m above msl. There are several peaks, the highest being Kolar Betta 2,630 m above msl. Mukurti was declared a wildlife sanctuary in 1980 under the Wildlife (Protection) Act of 1972 and a national park in 1990, mainly for the protection of the endangered Nilgiri Tahr *Hemitragus hylocrius*.

#### Vegetation types in the Upper Nilgiris

The vegetation of the Upper Nilgiris can be broadly classified into Southern Montane Wet Forest (shola), grasslands and exotic plantations. Most of the forested area in the Nilgiris is under plantation, with very few natural shola patches. The Southern Montane Wet Forest type is classified as 11 A (Type C1/SD2) by Champion and Seth (1968) and is found above 1,700 m elevation and comprises short to medium size evergreen trees of both tropical and temperate origin (Shetty and Vivekananthan 1971). Such forest patches occur, as a rule at the heads of streams and in the folds of converging

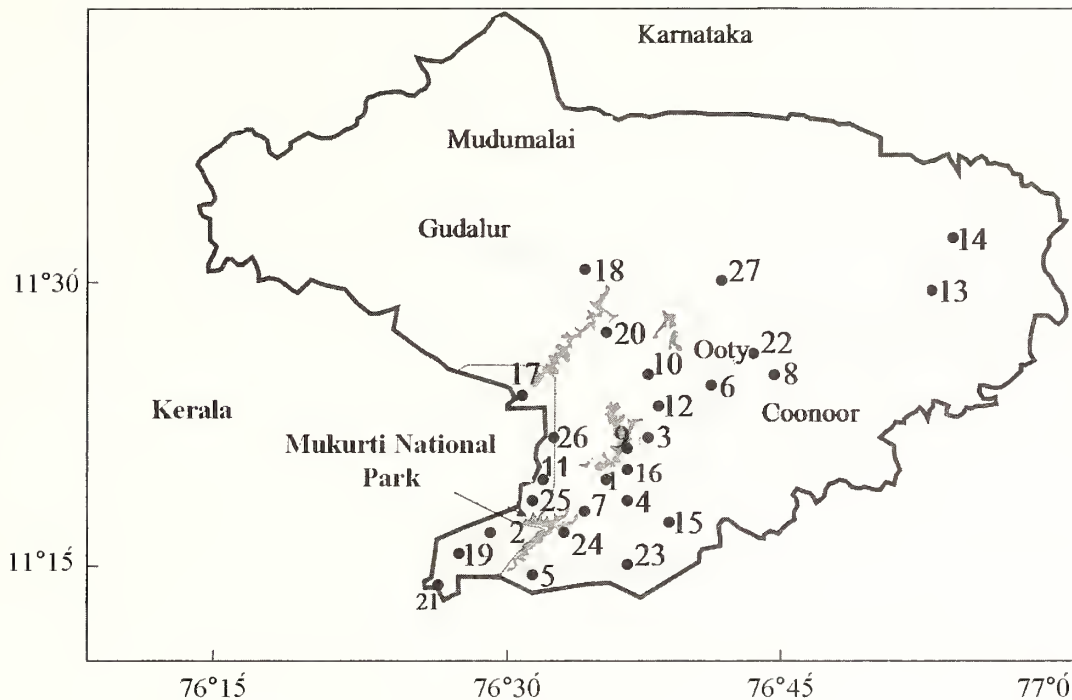


Fig. 2: The Nilgiris with localities described in the text

(1) Avalanche; (2) Bangitappal; (3) Bembatti; (4) Bikkatti; (5) Bison Swamp; (6) Cairn Hill; (7) Devar Betta; (8) Dodabetta; (9) Emerald; (10) Governor Shola; (11) Kolari Betta; (12) Iltalar; (13) Kotagiri; (14) Kodanadu; (15) Kundha; (16) Lawrence; (17) Mukurti Peak; (18) Naduvattam; (19) Nadukani; (20) Parson's Valley; (21) Sispara; (22) Snowdon; (23) Taishola Tea Estate; (24) Upper Bhavani; (25) Western Catchment II; (26) Western Catchment III; (27) Solur

species. In general, montane grasslands are located in high altitude areas of the Western Ghats. Once found on the entire Upper Nilgiris Plateau, such grasslands are presently confined to MNP with only a few good patches seen in Upper Bhavani, Lakkedi, Bison Swamp and other places. After clear felling of natural forest and burning of grasslands plantations of several exotic species were raised to feed the timber and pulp wood industry. Plantations consists of mainly Wattle *Acacia* spp., Blue Gum *Eucalyptus* spp., Pine *Pinus* spp., Cypress *Cupressus macrocarpa*, Cinchona *Cinchona cinchona*, and Tea *Thea sinensis*.

## METHODS

This paper is based on the notes from our field diaries maintained during fieldwork for bird community investigations as well as observations made during extensive surveys by AAZ and BS in the study area above 1,700 m elevation between December 2000 and April 2004. MNP, Avalanche, Lakkedi, Devar Betta, Upper Bhavani and Taishola of Nilgiris South Division formed the intensive study area. Other areas surveyed during this study include Governor's Shola, Cairn Hill Forest, Snowdon, Porthimund, Dodabetta, Taishola, Kora Kundha, Coonoor, Bikkatti,

Bembatti, Longwood Shola at Kotagiri, Kodanadu and Emerald Valley (Fig. 2 and Appendix 1)

Elevations in feet for the localities described in the historical records were converted to metres for uniformity in presentation. The nomenclature for the localities follows the Survey of India 1:50,000 toposheets and coordinates were recorded using a GARMIN 12XL GPS. Sites surveyed and described in this paper and their geographical locations mentioned in the paper are listed in Appendix 1.

Species recorded more than 10 times are described as common in this paper, while those seen between 3 and 10 times are described as uncommon and those seen only once or twice are termed rare for the Upper Nilgiris Plateau. The sequence followed Inskipp *et al.* (1996) while the nomenclature was followed according to Rasmussen and Anderton (2005). The conservation status of the threatened birds follows BirdLife International (2001). The status of species as recorded during this study is recorded as 'present status', while species recorded by other authors are given in a separate column. We discuss briefly the key conservation issues that are threatening the avifauna and biodiversity of the Upper Nilgiris. Our checklist includes breeding residents, winter visitors, local summer migrants, vagrants and passage migrants (Appendix 2).

The observations published in the form of an annotated checklist by Zarri *et al.* (2005) in *Buceros 10(1)* included observations by the authors and did not include synthesis of available literature as summarized in the current paper. The current format of the paper would also be easy to understand and user friendly.

## RESULTS

A total of 192 species was recorded from the Upper Nilgiris Plateau (till April 2004), including 47 records of earlier authors (Appendix 2). In general, the bird composition of the Upper Nilgiris appear depauperate compared to the lower elevations. For instance, Gokula (1998) recorded 265 species in the Mudumalai Wildlife Sanctuary in the lower elevations of the Nilgiri hills.

Of the 16 Western Ghats endemic species, 9 were recorded during this study, namely the Nilgiri Wood Pigeon *Columba elphinstonii*, Nilgiri Pipit *Anthus nilghiriensis*, Grey-headed Bulbul *Pycnonotus priocephalus*, Black-and-Orange Flycatcher *Ficedula nigrorufa*, Small Sunbird *Leptocoma minima*, Nilgiri Flycatcher *Eumyias albicaudatus*, Black-chinned Laughingthrush *Trochaloxyron cachinnans*, White-bellied Blue Flycatcher *Cyornis pallipes* and White-bellied Blue Robin *Myiomela albiventris*. Of the remaining seven species, Indian Rufous Babbler *Turdoides subrufus* and Indian Broad-tailed Grass-Warbler *Schoenicola platyrurus* might be expected towards the northern or eastern slopes of the Nilgiris, although we found no evidence of their presence during our visits.

Threatened species (BirdLife International 2001) recorded from the study area during this study include the Black-chinned Laughingthrush (Endangered) and Kashmir Flycatcher, Lesser Kestrel *Falco naumanni*, White-bellied Shortwing and Nilgiri Wood Pigeon (Vulnerable). Near Threatened species recorded during this study include the Nilgiri Pipit, Black-and-Orange Flycatcher and Nilgiri Flycatcher. Threatened species recorded from the Upper Nilgiris Plateau by other authors and not seen during this study include White-rumped Vulture *Gyps bengalensis* and Indian Vulture *Gyps indicus* (both the species are Critically Endangered); Lesser Florican *Sypheotides indicus* (Endangered) and Eastern Imperial Eagle *Aquila heliaca* and Wood Snipe *Gallinago nemoricola* (Vulnerable). Near Threatened species recorded by other authors include the Red-headed Vulture *Aegypius calvus*, Pallid Harrier *Circus macrourus*, Black-necked Stork *Ephippiorhynchus asiaticus* and Ferruginous Duck *Aythya nyroca*.

Compared to the records of Davison (1883), it appears that some species such as the Brahminy Kite *Haliastur indus*,

House Crow *Corvus splendens*, Besra Sparrowhawk *Accipiter virgatus*, Crested Serpent Eagle *Spilornis cheela*, Emerald Dove *Chalcophaps indica*, Alpine Swift *Tachymarptis melba* and White-throated Kingfisher *Halcyon smyrnensis* are more common presently than during the 19th century. However, species that have recorded a noticeable decline in the Upper Nilgiris include the Pallid Harrier, White-rumped Vulture, Long-billed Vulture, Red-headed Vulture, Egyptian Vulture, Eurasian Woodcock, Wood Snipe, Pintail Snipe *Gallinago stenura*, Jacobin Cuckoo, Large Hawk-cuckoo, Common Hawk-cuckoo.

## Selected species accounts

### Nilgiri Wood Pigeon *Columba elphinstonii*

Vulnerable. This species is a common resident and is restricted to the shola habitat; it is found in all eight IBAs of the Upper Nilgiris (Islam and Rahmani 2004).

### Lesser Florican *Sypheotides indicus*

Endangered. No recent record of this species is known from the Nilgiris. Davison (1883) quoted Hume "a specimen was killed on the slopes to the Nilgiris some years ago between Naduvattam and Pykara, going down to the Wynaad". The bird presumably might have been a vagrant, but the record should be considered of historical importance.

### Eurasian Woodcock *Scolopax rusticola*

Uncommon winter visitor. Once a common winter visitor and a favourite game bird, its population has apparently declined on the Nilgiris. A single bird was observed on December 28, 2002 in a small moist and shaded grass patch beside a wattle stand in Avalanche (an IBA). Subsequently, we sighted (probably) the same bird at the earlier site on December 30, 2002, December 31, 2002, January 05, 2003, and January 22, 2003. Another bird was sighted near Kolari Betta close to a waterhole along the road on January 23, 2003. Two more birds were sighted in January 2003 at Avalanche, another in December 2003 at Avalanche and one more in January 2004 at Lakkedi.

Davison (1883) reported the Eurasian Woodcock to be common from about October to the end of February in the Nilgiris. Home and Logan (1923) mention that a Woodcock was shot in April 28 near Mukurti Peak. This is an exceptionally late date for the Woodcock at the Nilgiris. Baker reported shooting up to 6 birds in a day and 35 during the season. He shot 35 in 1920-1921, and 29 in 1921-1922 (Inglis 1923). Whistler and Kinnear (1936) summarized the records of hunting by various authors by suggesting it was a common bird on the Upper Nilgiris.

The Eurasian Woodcock is believed to be a non-stop long distance flier in India, flying from the Himalaya to the Nilgiri Hills (a distance of 2,500 km) (Sengupta 1990a). Sengupta (1990b) suggested a migratory route of the species from Himalaya to Nilgiris via Bangladesh, West Bengal [where several specimens were netted in Salt Lake, Calcutta (now Kolkata) between 1963 and 1969] and Eastern Ghats, with or without a stopover. However, Rasmussen and Anderton (2005) have shown two routes in their book (plate 58, volume 1): one via Punjab-Haryana-Rajasthan and northern Western Ghats, and another via Bangladesh and Eastern Ghats, both merging in the southern Western Ghats.

#### **Wood Snipe *Gallinago nemoricola***

Vulnerable. This winter visitor was not recorded during this study. Davison (1883) considered that it "was never common and seems to be getting still rarer, year by year". The fact that 13 birds were shot in the Nilgiris between 1922 and 1935, however, suggested that no decline had taken place and that a small wintering population survived (Whistler and Kinnear 1936). Also, from his game records between 1923 and 1948, Phythian-Adams (1948) listed only 8 birds of this species shot in the Nilgiris unlike the Pintail and Fantail snipes that figured in the thousands. Hence, we assume that this is the rarest of all snipes wintering in the Upper Nilgiris.

#### **Egyptian Vulture *Neophron percnopterus***

We did not see even a single individual between December 2000 and April 2004. Davison (1883) reported them as abundant at the Nilgiris, especially at Ootacamund and in the vicinity of villages of *Badaga* community and on slopes, and breeding on numerous cliffs and slopes. Primrose (1904) also noted them as very common around the *Badaga* villages of the Nilgiris, and reported a large breeding colony at *Kota* community village near Kotagiri. Thirumurthi and Balaji (1999) reported the species at Coonoor (1,800 m above msl).

#### **White-rumped Vulture *Gyps bengalensis***

Critically Endangered. Not a single bird was seen by us during this study. More than 120 years ago, Davison (1883) had recorded them as abundant in the Nilgiris. Primrose (1904) described it as the most common vulture but nowhere plentiful, at the higher elevations. In recent years, this species has been reported to have declined greatly in many other parts of India (Prakash 1999). It disappeared from the Upper Nilgiris much before the vulture decline was noticed elsewhere, the reasons being far from known. Oaks *et al.* (2004) reported the residues of the non-steroidal anti-

inflammatory drug Diclofenac to be the cause of the decline of this bird and of *G. indicus* in Pakistan. Schultz *et al.* (2004) implicated the same drug for the crash in their populations in India and Nepal.

#### **Indian Vulture *Gyps indicus***

Critically Endangered. We did not see a single bird. Davison (1883) recorded it as occurring uncommonly in the Nilgiris and its slopes, while Primrose (1904) was not certain about its presence, as he could not observe it. It declined from the Upper Nilgiris much before the vulture crisis was observed in most other places. Refer the previous account for the details of the causes of the decline of the *Gyps* vultures.

#### **Red-headed Vulture *Aegypius calvus***

Critically Endangered. We did not find any during this study, but it was once a common vulture on the Nilgiris. Davison (1883) reported it to be not abundant and found mostly singly and sometimes in flocks of 6-50 vultures. Primrose (1904) reported it to be common and observed a nest near Craigmere Toll Gate, Ootacamund. In view of the earlier observations it appears that they have severely declined during the 20th century. Thirumurthi and Balaji (1999) claim to have recorded the species at Ootacamund and Kotagiri. Local birdwatchers (S. Sounderrajan and Ramneek Singh pers. comm., 2003) deny seeing this species in the last two to three decades.

#### **Lesser Kestrel *Falco naumanni***

Vulnerable. Vagrant or rare passage migrant. On November 16, 2001, a single female was seen perched on a wattle tree along the road near Upper Bhavani. The bird stayed on the perch sufficiently for us to observe its whitish claws and less distinct moustachial stripes.

#### **White-bellied Blue Robin *Myiomela albiventris***

Vulnerable. Common resident. Up to eight birds (usually single) could be seen foraging on the road passing through a shola in a vehicular drive of 200-300 m, immediately after sunset at Avalanche. It is recorded in all the eight IBAs of the Upper Nilgiris (Islam and Rahmani 2004).

#### **Kashmir Flycatcher *Ficedula subrubra***

Vulnerable. Uncommon winter visitor sparsely distributed in the Upper Nilgiris. Three birds sighted between March 09 and 27, 2001 at Avalanche. 16 birds were recorded during an intensive survey between October 08, 2001 and April 04, 2002 in different localities, namely Avalanche, Bembatti, Ramaya Road and Emerald Valley (*see* Zarri and

Rahmani 2004 for details). Among the eight IBAs, it has been recorded only in Avalanche (Islam and Rahmani 2004).

Apparently it shows site fidelity, as three pairs were recorded coming exactly to the same small plantation patches (winter territory) in the winters of 2001 to 2003 (Zarri and Rahmani 2004). A male was ringed on January 24 and a female on January 30, 2003 at Avalanche. However, we could not locate these birds at Avalanche during the winters of 2003 and 2004. We need more ringing data to determine the extent of site fidelity in this species.

#### **Black-and-Orange Flycatcher *Ficedula nigrorufa***

Near Threatened. Common resident, all over Nilgiris associated with the shola habitat. Ten nests with an average clutch of two eggs were recorded between February and May 2002 and 2003 in shola habitat at Avalanche, Longwood shola, Taishola, Mullimunth and Snowdon (all located 2,000 m above msl). The nest is globular and untidy with an entrance more or less at top. All the nests located during this study were lined with the blades of a sedge *Carex baccans*. Nests are generally placed on a dead stump about 1 m from the ground with a little cover. Pittie (1989) sighted a fledgling in mid-June at Sim's Park near Coonoor.

#### **Nilgiri Flycatcher *Eumyias albicaudatus***

Near Threatened. Common resident, it affects both shola and plantations. Sixteen cup-shaped nests, generally placed in earthen banks and holes in trees, with a clutch of two or three pinkish-white eggs, were recorded during this study at Bangitappal, Avalanche, Western Catchment-III, Longwood shola, Mullimunth, Taishola, Bikkatti, Bembatti, Dodabetta and Parson's Valley. We observed them feeding on fruits on several occasions. Dewar (1904) also recorded them feeding on fruits. Nilgiri Flycatcher is found in all the eight IBAs of the Upper Nilgiris (Islam and Rahmani 2004).

#### **Grey-headed Bulbul *Pycnonotus priocephalus***

Vagrant or rare resident in the Upper Nilgiris Plateau, only one bird sighted at Taishola on April 25, 2002. Davison (1883) found one specimen near Coonoor (1,800 m above msl). Jameson (1976) also recorded it at Coonoor. Apparently, it is more common at lower elevations and on the slopes of the Nilgiris. Therefore, the sighting of this species in the Upper Nilgiris (above 2,100 m above msl) is of interest.

#### **Yellow-browed Bulbul *Iole indica***

Vagrant or rare resident, perhaps subject to vertical movements. One bird was seen in Taishola (2,100 m) on April 25, 2002. It is reported from places such as Kodanadu, Kotagiri and Naduvattam at lower elevations. This bird does

not occur on the Plateau of the Nilgiris and is common below about 2,000 m (Davison 1883). Jameson (1976) records the species at Coonoor. It was thought to be restricted to the evergreen forests, but in recent times it has spread to deciduous forests perhaps due to the loss of its evergreen forest habitat throughout the Western Ghats.

#### **Black-chinned Laughingthrush *Trochalopteron cachinnans***

Endangered. Common resident, it is the only bird primarily endemic to the Nilgiri hills, usually seen above 1,600 m. It is found in all the eight IBAs of the Upper Nilgiris (Islam and Rahmani 2004). It was locally common (Ali and Ripley 1987), but has now declined (BirdLife International 2001). Zarri (2005) recorded 58 nests during his 4-year study on the ecology of this bird. Most of the nests were found in shola habitat mostly along the edges, on stunted trees or shrubs between one and four metre height. All nests were located between 1,900 to 2,500 m above msl.

#### **Nilgiri Pipit *Anthus nilghiriensis***

Near Threatened. Common resident, restricted to the undisturbed grasslands at higher elevations areas such as Bangitappal, Western Catchment and Lakkedi. It is found in good numbers at Avalanche and MNP and sparingly on other sites. Uma Maheswari (pers. comm., 2003) observed a nesting preference for larger tussock forming grasses in the valleys. However, during this study three nests were recorded in short tussocks with little cover, on ridges in MNP at 2,000 to 2,100 m.

#### **Bird conservation issues**

Habitat loss has been implicated as one of the major causes for the decline of many bird species (BirdLife International 2001). In the Nilgiris, habitat conversion and loss occurred rampantly during the 19th and 20th centuries. However, the process has been slowed down since the enactment of the Forest Conservation Act in 1980. Except for the MNP, the entire study area is unprotected, and thus faces problems of habitat degradation, plant invasions and burgeoning anthropogenic pressures due to infrastructure development. Key conservation issues are as follows.

**Species decline or disappearance:** A comparison of our bird records with the published literature from the last two centuries reveals a catastrophic decline or disappearance of some vultures, many raptors and snipes. Among these, the *Gyps* vulture disappearance from the study area has been the most striking one. However, the decline of the vultures from the Nilgiris started long before the catastrophic decline of the *Gyps* species in north and north-west India in the mid

1990s (Prakash 1999) due to the non-steroidal anti-inflammatory drug Diclofenac, which has been implicated as the reason for the steep decline of the *Gyps* vultures in South Asia (Oaks *et al.* 2004; Shultz *et al.* 2004).

The Eurasian Woodcock *Scolopax rusticola* and various species of snipes (Wood Snipe *Gallinago nemoricola*, Pintail Snipe *G. stenura*, Common Snipe *Gallinago gallinago* and Jack Snipe *Lymnocyptes minivius*), the popular game birds, abundant during the early 20th century (Davison 1883; Phythian-Adams 1927) have declined in the Upper Nilgiris. Apparently, hunting pressure and habitat loss during the post-independence period may have resulted in such grave declines.

**Habitat loss and conversions:** The native biodiversity of the Nilgiris has borne the brunt of years of unscientific forestry operations. Serious losses to the Nilgiris biodiversity occurred as the montane evergreen forests (shola) and high altitude grasslands were converted into monoculture plantations. The opening up of the hills for settling immigrant labourers of the tea, timber and pulp wood industries and other development projects led to clear felling of sholas and grasslands. Landowners started raising trees on a commercial scale to the extent that at one time wood was cheaper than the cost of cutting it (Davidar 1986). Several fast growing species, such as Australian Blackwood *Acacia melanoxylon*, Wattle *A. mearnsii*, Blue Gum *Eucalyptus globulus*, Pine *Pinus* spp., Cypress *Cupressus macrocarpa* and Tea *Thea sinensis* were introduced. Wattle regenerates through seeds and thus slowly spreads into the native grasslands.

**Infrastructure development and human settlements:** Davidar (1986) described the Nilgiris as an encroacher's paradise and its ecology as "grievously fractured". High precipitation in the Nilgiris invited other major threats from hydroelectric projects such as Pykara in 1932 and the giant Kundha project set up with Canadian aid in the 1960s. These projects and many others still continue despite opposition from the local NGOs. After the completion of hydroelectric projects, all the labourers settled in these hills. Several new roads were built under these projects that further opened up remote and inaccessible forests and made them more vulnerable to exploitation. The ecology of this hill complex was further damaged, particularly near Coonor and Kotagiri, with the settling of the repatriates from Sri Lanka under the Sastri-Srimavu Pact.

**Agricultural intensification:** Huge areas of natural habitat in the Nilgiris have been converted to agriculture, notably for vegetables. Excessive reliance on inorganic pesticides and fertilisers in the current agricultural practices in the Nilgiris lead to effects that are usually neglected. We

suspect that the excessive use of inorganic fertilizers and pesticides all over the Nilgiris affects many bird species, including common birds. Inorganic pesticides have been implicated for breeding failures in many species; and we suspect that many species might be getting affected by their excessive use in the Nilgiris also.

**Plant invasions and habitat loss:** Avifauna specific to the grassland habitat in the study area faced major threats due to conversion of grasslands to plantations and introduction of alien invasive species. Most of these were introduced in the Nilgiris during the British period. For instance, one senior official, a Scot, is in fact reputed to have gone to the extent of filling his pockets with the seeds of the Gorse *Ulex europaeus* and scattering them about freely during his walks (Davidar 1986). Scotch broom *Cytisus scoparius* and Gorse have invaded native habitats in many countries, and in the Nilgiris there has been considerable loss of grassland habitat, affecting birds such as the Nilgiri Pipit and other biodiversity (Zarri *et al.* 2007).

**Intentional grassland fires:** Frequent and intentional burning of the grassland habitat poses another major threat to the endemic flora and fauna of the region. Five major fires were recorded between January-June 2003 in MNP, burning around 20-25% of the grassland area. Grassland is burnt every year by people from Kerala to lure Sambar *Cervus unicolor* with fresh grass for poaching. The burning corresponds with the breeding seasons of grassland dependent birds, such as the Nilgiri Pipit. Much to the delight of poachers, this is also the time when fires spread very fast due to the bulk accumulation of litter in the grasslands.

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Appendix 1

Checklist of birds recorded in the Upper Nilgiris Plateau, Western Ghats between December 2000 and April 2004  
(Includes historical records)

Name	Present Status	Historical records	Threat Category	Notes
Painted Bush Quail <i>Perdicula erythrorhyncha</i>	R, C			
Red Spurfowl <i>Galloperdix spadicea</i>	R, C			
Grey Junglefowl <i>Gallus sonneratii</i>	R, C			
Indian Peafowl <i>Pavo cristatus</i>	M, R			One adult male sighted at Avalanche on March 10, 2001
Common Teal <i>Anas crecca</i>	W	*		Small parties seen at Ootacamund Davison (1883)
Ferruginous Duck <i>Aythya nyroca</i>	W, V/R		NT	A.C. Sounderrajan (pers. comm.) sighted a bird at Ootacamund Lake in 1995
Rufous Woodpecker <i>Micropterus brachyurus</i>	V	*		One specimen obtained near Ootacamund (Davison 1883)
White-bellied Woodpecker <i>Dryocopus javensis</i>	V/R			
Streak-throated Woodpecker <i>Picus xanthopygaeus</i>	R, C			
Black-rumped Flameback <i>Dinopium benghalense</i>	R, C			
Greater Flameback <i>Chrysocolaptes lucidus</i>	R, C			
White-cheeked Barbet <i>Megalaima viridis</i>	R, C			
Ceylon Small Barbet <i>Megalaima rubricapillus</i>	R, R			
Common Hoopoe <i>Upupa epops</i>	R, C			Davison (1883) shot great numbers in the Nilgiris; reported uncommon in Ootacamund (Stairmand 1972)
Malabar Trogon <i>Harpactes fasciatus</i>	V/RM			A pair seen at Taishola on April 25, 2002
Indian Roller <i>Coracias benghalensis</i>	R, UC			Does not ascend to the Nilgiri Plateau (Davison 1883)
Common Kingfisher <i>Alcedo atthis</i>	V/RR			One seen at Avalanche on January 11, 2003 and one on May 20, 2003; one seen by Kumar (1996) at Pykara
Stork-billed Kingfisher <i>Pelargopsis capensis</i>	R, C			
White-throated Kingfisher <i>Halcyon smyrnensis</i>	R, C			Recorded as a straggler by Davison (1883)
Black-capped Kingfisher <i>Halcyon pileata</i>	V			One recorded near Avalanche Reservoir on March 08, 2002
Little Green Bee-eater <i>Merops orientalis</i>	V/RR			One seen on June 29, 2002 at Mullimunth
Chestnut-Headed Bee-Eater <i>Merops leschenaulti</i>	R, UC			Two seen at Kundha, never seen in MNP; does not occur on Plateau (Davison 1883)
Jacobin Cuckoo <i>Clamator jacobinus</i>	RR	*		Common in Nilgiris (Davison 1883)
Large Hawk-Cuckoo <i>Hierococcyx sparverioides</i>	W	*		Numerous on the Nilgiris (Davison 1883)
Common Hawk-Cuckoo <i>Hierococcyx varius</i>		*		Plentiful in Nilgiris (Davison 1883)
Common Cuckoo <i>Cuculus canorus</i>	W, R			One bird seen at Avalanche and another at upper Bhavani on September 30, 2002
Asian Koel <i>Eudynamys scolopacea</i>	V	*		One bird collected at Ootacamund (Davison 1883)
Greater Coucal <i>Centropus sinensis</i>	R, C			
Plum-headed Parakeet <i>Psittacula cyanocephala</i>	V, R			One bird seen at Avalanche on August 06, 2002
Malabar Parakeet <i>Psittacula columboides</i>	R, UC			Many shot close to Ootacamund (Davison 1883)
Himalayan Swiftlet <i>Collocalia unicolor</i>	R, C			
Indian White-rumped Spinetail <i>Zoonavena sylvatica</i>	R, C			
Alpine Swift <i>Tachymarpis melba</i>	R, C			Uncommon in the Nilgiris (Davison 1883)
Common Barn Owl <i>Tyto alba</i>	V/RR			A dead one found in good condition at Ootacamund in April 2004, was skinned and sent to the BNHS collection

BIRDS OF THE UPPER NILGIRIS PLATEAU, WESTERN GHATS

Appendix 1 (contd.)

Checklist of birds recorded in the Upper Nilgiris Plateau, Western Ghats between December 2000 and April 2004  
(Includes historical records)

Name	Present Status	Historical records	Threat Category	Notes
Collared Scops Owl <i>Otus lettia</i>		*		Recorded by Primrose (1904)
Forest Eagle Owl <i>Bubo nipalensis</i>		*		Occurs sparingly on the Nilgiris (Davison 1883)
Brown Fish Owl <i>Ketupa zeylonensis</i>	R, C			
Mottled Wood Owl <i>Strix ocellata</i>	R, R			One adult sighted on August 5, at Avalanche
Brown Wood Owl <i>Strix leptogrammica</i>	R, C			
Jungle Owlet <i>Glaucidium radiatum</i>		*		Recorded as uncommon by Primrose (1904) up to 1,940 m near Terrace Tea Estate
Short-Eared Owl <i>Asio flammeus</i>	R, R			Two seen at Bangitappal, one on March 03, 2001 and another in June 2002
Grey Nightjar <i>Caprimulgus jotaka</i>	R, C			
Indian Little Nightjar <i>Caprimulgus asiaticus</i>	R, C			
Rock Pigeon <i>Columba livia</i>	R, C			
Nilgiri Wood Pigeon <i>Columba elphinstonii</i>	R, C		VU	See text
Laughing Dove <i>Streptopelia senegalensis</i>		*		Occurs sparingly in the Upper Nilgiris (Davison 1883)
Spotted Dove <i>Streptopelia chinensis</i>	R, C			
Eurasian Collared-Dove <i>Streptopelia decaocto</i>		*		One shot near Ootacamund (Davison 1883)
Emerald Dove <i>Chalcophaps indica</i>	M, C			Seen upto 2,400 m during this study; Davison (1883) did not find it as high as at Ootacamund (2,000 m)
Ceylon Green Pigeon <i>Treron pompadora</i>	V			One seen at Avalanche on September 14, 2002
Lesser Florican <i>Sypheotides indicus</i>	V	*	EN	See text
White-breasted Waterhen <i>Amaurornis phoenicurus</i>	R, C			Common around Ootacamund Lake
Common Moorhen <i>Gallinula chloropus</i>	R, C			
Eurasian Woodcock <i>Scolopax rusticola</i>	W, UC			See text
Wood Snipe <i>Gallinago nemoricola</i>	W	*	VU	See text
Pintail Snipe <i>Gallinago stenura</i>	W, R			One recorded at Avalanche on February 20, 2004
Common Snipe <i>Gallinago gallinago</i>	W	*		See (Davison 1883); Inglis (1923); Phythian-Adams (1948) for details
Jack Snipe <i>Lymnocyptes minimus</i>	W	*		Davison (1883); Phythian-Adams (1948)
Green Sandpiper <i>Tringa ochropus</i>	W, C			Recorded as rare by Davison (1883)
Wood Sandpiper <i>Tringa glareola</i>		*		Seen at Botanical Garden Ootacamund by Davison (1883)
Common Sandpiper <i>Actitis hypoleucos</i>	W, C			
Black-winged Stilt <i>Himantopus himantopus</i>	V	*		A.C. Sounderrajan (pers. comm.) sighted one bird at Ootacamund Lake in 1995
Red-wattled Lapwing <i>Vanellus indicus</i>	R, C			
Osprey <i>Pandion haliaetus</i>	W, R			One adult seen near Upper Bhavani Dam on December 19, 2003
Black-shouldered Kite <i>Elanus caeruleus</i>	R, C			
Black Kite <i>Milvus migrans</i>	R/W, C			
Brahminy Kite <i>Haliastur indus</i>	R, C			Not numerous on the Nilgiris (Davison 1883); uncommon (Primrose 1904)
Egyptian Vulture <i>Neophron percnopterus</i>		*		See text
White-rumped Vulture <i>Gyps bengalensis</i>		*	CE	See text

BIRDS OF THE UPPER NILGIRIS PLATEAU, WESTERN GHATS

Appendix 1 (contd.)

Checklist of birds recorded in the Upper Nilgiris Plateau, Western Ghats between December 2000 and April 2004  
(Includes historical records)

Name	Present Status	Historical records	Threat Category	Notes
Indian Vulture <i>Gyps indicus</i>		*	CE	See text
Red-headed Vulture <i>Sarcogyps calvus</i>		*	NT	See text
Short-toed Eagle <i>Circaetus gallicus</i>	W	*		One seen at Taishola on June 22, 2002; one seen again at Taishola on July 04, 2002
Crested Serpent Eagle <i>Spilornis cheela</i>	R, C			Davison (1883) recorded them as absent on the Nilgiri Plateau
Black Eagle <i>Ictinaetus malayensis</i>	R, W			
Eurasian Marsh Harrier <i>Circus aeruginosus</i>		*		Common on the Nilgiris (Davison 1883) Occurs sparingly (Davison 1883)
Pied Harrier <i>Circus melanoleucos</i>		*	NT	Recorded as abundant (Davison 1883); six birds seen (Thirumurthi and Balaji 1999)
Pallid Harrier <i>Circus macrourus</i>		*		Seven birds in four locations (Thirumurthi and Balaji 1999); no other records known from the Upper Nilgiris
Crested Goshawk <i>Accipiter trivirgatus</i>		*		Recorded as common (Davison 1883); a sighting at Solur described as unusual (Kumar 1992)
Shikra <i>Accipiter badius</i>	R, UC			Described as rare by Davison (1883)
Besra Sparrowhawk <i>Accipiter virgatus</i>	R, C	*		One female shot on February 07, 1881 (Davison 1883); 16 birds seen near Kotagiri and Kilkotagiri (Thirumurthi and Balaji 1999)
Eurasian Sparrowhawk <i>Accipiter nisus</i>		*		
Oriental Honey-buzzard <i>Pernis ptilorhynchus</i>	W, C			
White-eyed Buzzard <i>Butastur teesa</i>	W, UC			
Steppe Buzzard <i>Buteo buteo vulpinus</i>	W, C			
Long-legged Buzzard <i>Buteo rufinus</i>	W, C			
Eastern Imperial Eagle <i>Aquila heliaca</i>		*	VU	Recorded as an occasional visitor (Burgess 1937)
Bonelli's Eagle <i>Hieraaetus fasciatus</i>	R, UC			Three birds seen at Taishola on September 12, 2003. Reported as common by Burgess (1937)
Booted Eagle <i>Hieraaetus pennatus</i>		*		Noted as common (Primrose 1904)
Rufous-bellied Eagle <i>Hieraaetus kienerii</i>		*		Four birds recorded during a raptor survey (Thirumurthi and Balaji 1999)
Changeable Hawk Eagle <i>Spizaetus limnaeetus</i>		*		Certainly occurs (Davison 1883); one bird seen (Stairmand 1972)
Mountain Hawk Eagle <i>Spizaetus nipalensis</i>	V	*		One specimen given to Davison by Mr. F.L. Chapman of Ootacamund or Mr. Hume, the only specimen known to Davison (1883)
Lesser Kestrel <i>Falco naumanni</i>	V/PM		VU	See text
Common Kestrel <i>Falco tinnunculus</i>	R, C			
Peregrine Falcon <i>Falco peregrinus</i>		*		One pair obtained by Davison (1883); one bird seen by Thirumurthi and Balaji (1999)
Little Grebe <i>Tachybaptus ruficollis</i>	R, C			
Oriental Darter <i>Anhinga melanogaster</i>		*		Obtained at Pykara (9 miles from Ootacamund) by Davison (1883)
Great Cormorant <i>Phalacrocorax carbo</i>	R, C			
Little Egret <i>Egretta garzetta</i>	R			One seen on January 11, 2004 and another on January 16, 2004, both at Avalanche reservoir. One seen at T.R. Bazar (S. Thejaswi, pers. comm.)

BIRDS OF THE UPPER NILGIRIS PLATEAU, WESTERN GHATS

Appendix 1 (contd.)

Checklist of birds recorded in the Upper Nilgiris Plateau, Western Ghats between December 2000 and April 2004  
(Includes historical records)

Name	Present Status	Historical records	Threat Category	Notes
Eastern Cattle Egret <i>Bubulcus coramandus</i>	R, C			
Indian Pond Heron <i>Ardeola grayii</i>	R, C			Seen year-round in contrast to the observations of Davison (1883).
Black-crowned Night Heron <i>Nycticorax nycticorax</i>	R, R			One seen at Bangitappal on March 08, 2002
Malayan Night-heron <i>Gorsachius melanolophus</i>	V			One sub-adult sighted near Parson's Valley on May 21, 2003
White Stork <i>Ciconia ciconia</i>	V	*		Eighteen birds seen at Sandy nullah (between Ootacamund and Pykara) (Davison 1883)
Black-necked Stork <i>Ephippiorhynchus asiaticus</i>	V	*	NT	A.C. Sounderrajan (pers. comm.) sighted one bird at Cairn Hill in 1990 and Photographed
Indian Pitta <i>Pitta brachyuran</i>	W, UC			
Brown Shrike <i>Lanius cristatus</i>	W, C			
Long-tailed Shrike <i>Lanius schach</i>	R, C			
House Crow <i>Corvus splendens</i>	R, C			Does not ascend hills of the Nilgiris (Davison 1883)
Large-billed Crow <i>Corvus (macrorhynchus) culminatus</i>	R, C			
Ashy Woodswallow <i>Artamus fuscus</i>	R, R			One seen near Kotagiri on January 13, 2002
Eurasian Golden Oriole <i>Oriolus oriolus</i>	W, UC			
Black-hooded Oriole <i>Oriolus xanthornus</i>		*		Shot on several occasion close to Ootacamund (Davison 1883)
Black-headed Cuckooshrike <i>Coracina melanopectera</i>		*		Shot at Botanical Garden, Ootacamund (Davison 1883); reported from Coonoor (Jameson 1971)
Scarlet Minivet <i>Pericrocotus speciosus</i>	V			Only one male observed on March 29, 2003 at Avalanche
Pied Flycatcher-Shrike <i>Hemipus picatus</i>	R, C			
White-throated Fantail <i>Rhipidura albicollis</i>	R, C			
White-browed Fantail <i>Rhipidura aureola</i>	R, C			
Ashy Drongo <i>Dicrurus leucophaeus</i>	W, C			
Bronzed Drongo <i>Dicrurus aeneus</i>		*		Seen as well as shot by Davison (1883)
Greater Racket-tailed Drongo <i>Dicrurus paradiseus</i>	V	*		Only one specimen shot by Davison (1883), on the Ootacamund-Kotagiri road (Davison 1883)
Asian Paradise-flycatcher <i>Terpsiphone paradisi</i>	M, C			
Common Iora <i>Aegithina tiphia</i>	R, UC			
Blue-headed Rock Thrush <i>Monticola cinclorhynchus</i>	W, UC			
Malabar Whistling-Thrush <i>Myiophonus horsfieldii</i>	R, R			Never recorded at Ootacamund (Davison 1883); never seen or heard at Coonoor (Jameson 1969); one recorded near Governor's Shola (Nair 1995)
Pied Ground Thrush <i>Zoothera wardii</i>		*		Recorded mainly at lower elevations close to Coonoor (Khan 1980)
Orange-headed Thrush <i>Zoothera citrina</i>	R, UC			
Small-billed Scaly Thrush <i>Zoothera dauma</i>	R, C			
Common Blackbird <i>Turdus merula</i>	R, C			
White-bellied Shortwing <i>Myiomela albiventris</i>	R, C		VU	See text
Asian Brown Flycatcher <i>Muscicapa dauurica</i>	W, R			
Rusty-tailed Flycatcher <i>Muscicapa ruficauda</i>		*		Occurs sparingly on the Nilgiris Plateau (Davison 1883)
Brown-breasted Flycatcher <i>Muscicapa muttui</i>	W, R			

BIRDS OF THE UPPER NILGIRIS PLATEAU, WESTERN GHATS

Appendix 1 (contd.)

Checklist of birds recorded in the Upper Nilgiris Plateau, Western Ghats between December 2000 and April 2004  
(Includes historical records)

Name	Present Status	Historical records	Threat Category	Notes
Kashmir Flycatcher <i>Ficedula subrubra</i>	W, UC		VU	See text
Black-and-Orange Flycatcher <i>Ficedula nigrorufa</i>	R, C		NT	See text
Verditer Flycatcher <i>Eumyias thalassinus</i>	W, UC			Extremely rare (Davison 1883)
Nilgiri Flycatcher <i>Eumyias albicaudatus</i>	R, C		NT	See text
White-bellied Blue Flycatcher <i>Cyornis pallipes</i>	R, R			
Tickell's Blue Flycatcher <i>Cyornis tickelliae</i>		*		One specimen obtained (Davison 1883); two males seen at Ootacamund (Kumar 1996); recorded at Coonoor (Jameson 1976)
Grey-headed Canary Flycatcher <i>Culicicapa ceylonensis</i>	R, C			
Indian Blue Robin <i>Luscinia brunnea</i>	W, C			
Oriental Magpie-robin <i>Copsychus saularis</i>	R, C			
Pied Bushchat <i>Saxicola caprata</i>	R, C			
Rosy Starling <i>Sturnus roseus</i>	W, R			One sub-adult seen at Avalanche in January 2003
Common Myna <i>Acridotheres tristis</i>	R, C			Does not ascend the Nilgiris Plateau (Davison 1883); common about Coonoor (Dewar 1904)
Jungle Myna <i>Acridotheres fuscus</i>	R, C			
Velvet-fronted Nuthatch <i>Sitta frontalis</i>	R, C			
Great Tit <i>Parus major</i>	R, C			
Black-lored Yellow Tit <i>Parus xanthogenys</i>	R, UC			A total of 10 birds seen in three different sightings on different dates
Dusky Crag-martin <i>Ptyonoprogne concolor</i>	R, C			
Barn Swallow <i>Hirundo rustica</i>	W, C			
House Swallow <i>Hirundo tahitica</i>	R, C			
Red-Rumped Swallow <i>Hirundo daurica</i>	PM, R			Only one flock of about 100 birds seen on November 02, 2003 at Bangitappal
Grey-headed Bulbul <i>Pycnonotus priocephalus</i>	V/RR			See text
Red-whiskered Bulbul <i>Pycnonotus jocosus</i>	R, C			
Red-vented Bulbul <i>Pycnonotus cafer</i>	R, C			
Yellow-browed Bulbul <i>Iole indica</i>	V/RR			See text
Black Bulbul <i>Hypsipetes leucocephalus</i>	R, C			
Grey-breasted Prinia <i>Prinia hodgsonii</i>	V			
Plain Prinia <i>Prinia inornata</i>	R, C			
Ashy Prinia <i>Prinia socialis</i>	R, C			
Oriental White-eye <i>Zosterops palpebrosus</i>	R, C			
Blyth's Reed-warbler <i>Acrocephalus dumetorum</i>	W, C			
Eastern Orphee Warbler <i>Sylvia crassirostris</i>	R, C			Common towards Coonoor, never seen in MNP
Common Tailor Bird <i>Orthotomus sutorius</i>	R, UC	*		Recorded about Coonoor (Davison 1883; Pittie 1989; Dewar 1904); Never seen at Ootacamund or MNP
Tickell's Leaf Warbler <i>Phylloscopus affinis</i>	W, C			
Greenish Warbler <i>Phylloscopus trochiloides</i>	W, C			
Large-billed Leaf Warbler <i>Phylloscopus magnirostris</i>	W, C			
Tytler's Leaf Warbler <i>Phylloscopus tytleri</i>	W	*		Two specimens obtained: one on March 10, 2001 and another on January 22, 2002 (Davison 1883)
Black-chinned Laughingthrush <i>Trochalopteron cachinnans</i>	R, C		EN	See text
Puff-Throated Babbler <i>Pellorneum ruficeps</i>	R, R			

BIRDS OF THE UPPER NILGIRIS PLATEAU, WESTERN GHATS

Appendix 1 (contd.)

Checklist of birds recorded in the Upper Nilgiris Plateau, Western Ghats between December 2000 and April 2004  
(Includes historical records)

Name	Present Status	Historical records	Threat Category	Notes
Indian Scimitar Babbler <i>Pomatorhinus (schisticeps) horsfieldii</i>	R, C			
Tawny-bellied Babbler <i>Dumetia hyperythra</i>		*		Shot at Naduvattam (1,800 m) (Davison 1883)
Large Grey Babbler <i>Turdoides malcolmi</i>		*		The only record of a single flock of 20 birds at Ootacamund (Davison 1883)
Jungle Babbler <i>Turdoides striata</i>	R, C			
Brown-cheeked Fulvetta <i>Alcippe poiocephala</i>	R, C			
Crested Lark <i>Galerida cristata</i>	R, UC			Uncommon but seen towards Kotagiri and never in MNP
Thick-billed Flowerpecker <i>Dicaeum agile</i>	R, C			
Small Sunbird <i>Leptocoma minima</i>	R, C			
Purple Sunbird <i>Cinnyris asiatica</i>	M, R			
House Sparrow <i>Passer domesticus</i>	R, C			
Forest Wagtail <i>Dendronanthus indicus</i>	W, UC			Described as rare by Davison (1883)
White-browed Wagtail <i>Motacilla maderaspatensis</i>	R, C			
Western Yellow Wagtail <i>Motacilla flava</i>	W, R			
Grey Wagtail <i>Motacilla cinerea</i>	W, C			
Richard's Pipit <i>Anthus richardi</i>	W, UC			
Paddyfield Pipit <i>Anthus rufulus</i>	R, C			
Long-billed Pipit <i>Anthus similis</i>	R, UC			
Nilgiri Pipit <i>Anthus nilghiriensis</i>	R, C		NT	See text
Olive-backed Pipit <i>Anthus hodgsoni</i>	W, C			
Red Avadavat <i>Amandava amandava</i>	R, UC			Common in Nilgiris as per Davison (1883)
Scaly-breasted Munia <i>Lonchura punctulata</i>	R, C			
Common Rosefinch <i>Corpodacus erythrinus</i>	W, C			

Sequence follows Inskipp *et al.* 1996; Nomenclature follows Birds of South Asia. The Ripley Guide. Pamela C. Rasmussen & John C. Anderton (2005)

Key: Present Status: W = wintering; R = resident; M = migrant (summer or monsoon migrant); PM = passage migrant; V = vagrant; C = common (more than ten sightings); UC = uncommon (seen between three to nine times); R = rare (one or two sightings); RR = rare resident; RM = rare migrant

\* = species recorded by earlier authors but not seen by us between December 2000 and April 2004 (check for source in the Notes column).

Threat category: CE = critically endangered; EN = endangered; VU = vulnerable; NT = near threatened (follows BirdLife International (2001).

MNP = Mukurti National Park

## Appendix 2

Gazetteer of localities mentioned in the text

Locality	Coordinates	Altitude (m above msl)
Avalanche*	11° 29.884' N 76° 59.163' E	2,100
Bangitappal	11° 25.880' N 76° 51.765' E	2,200
Bembatti	11° 33.358' N 76° 65.445' E	2,000
Bikkatti	11° 26.948' N 76° 62.239' E	2,050
Bison Swamp	11° 21.360' N 76° 53.020' E	2,300
Cairn Hill	11° 38.717' N 76° 67.808' E	2,100
Coonoor	11° 33.715' N 76° 79.918' E	1,800
Devar Betta	11° 25.912' N 76° 57.343' E	2,300
Dodabetta	11° 40.156' N 76° 73.738' E	2,634
Emerald	11° 31.483' N 76° 62.595' E	1,950
Governor's Shola *	11° 39.221' N 76° 64.279' E	2,100
Kolari Betta	11° 28.354' N 76° 56.518' E	2,550
Kotagiri	11° 43.287' N 76° 87.476' E	1,850
Kodanadu	11° 51.222' N 76° 40.221' E	1,700
Kundha	Not available	1,900
Lakkedi	11° 26.789' N 76° 55.497' E	2,150
Mukurti Peak*	11° 37.005' N 76° 51.893' E	2,500
Naduvattam	11° 48.641' N 76° 54.308' E	1,750
Nadukani	11° 22.579' N 76° 46.710' E	2,150
Parson's Valley	Not available	2,100
Snowdon	11° 43.115' N 76° 72.084' E	2,200
Taishola Tea Estate*	11° 21.223' N 76° 61.246' E	2,000
Ootacamund (Ooty)	11° 40.344' N 76° 69.734' E	2,000
Upper Bhavani	11° 22.256' N 76° 53.086' E	2,200
Western Catchment II*	11° 31.833' N 76° 54.483' E	2,200
Western Catchment III*	11° 33.407' N 76° 55.381' E	2,300

Localities nomenclature follows Survey of India toposheets except for *Ootacamund* (replacing Udhagamandalam and Ooty).

\* = IBA or part of an IBA

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